

**UNCLASSIFIED**

**AD 409 056**

**DEFENSE DOCUMENTATION CENTER**

**FOR**

**SCIENTIFIC AND TECHNICAL INFORMATION**

**CAMERON STATION, ALEXANDRIA, VIRGINIA**



**UNCLASSIFIED**

NOTICE: When government or other drawings, specifications or other data are used for any purpose other than in connection with a definitely related government procurement operation, the U. S. Government thereby incurs no responsibility, nor any obligation whatsoever; and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use or sell any patented invention that may in any way be related thereto.

N-63-4-2

FTD-TT 62-1790

409 056

CATALOGED BY DDC  
AS AD No. 409056

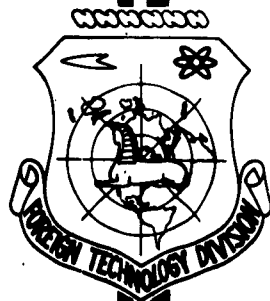
## TRANSLATION

GLASS LUBRICATION FOR HOT  
MACHINING OF METALS

By

K. L. Kovalev, V. A. Ryabov, I. V. Fomenko, et.al.

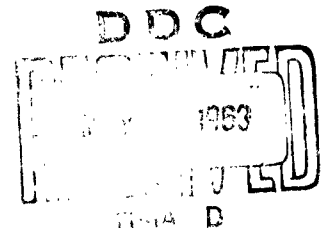
## FOREIGN TECHNOLOGY DIVISION



AIR FORCE SYSTEMS COMMAND

WRIGHT-PATTERSON AIR FORCE BASE

OHIO



## UNEDITED ROUGH DRAFT TRANSLATION

GLASS LUBRICATION FOR HOT MACHINING OF METALS

BY: K. L. Kovalev, V. A. Ryabov, I. V. Fomenko, et. al.

English Pages: 3

SOURCE: Russian Patent Nr. 148190, (Appl. Nr. 743041/23-5, Aug. 29, 1961), pp 1-2

THIS TRANSLATION IS A RENDITION OF THE ORIGINAL FOREIGN TEXT WITHOUT ANY ANALYTICAL OR EDITORIAL COMMENT. STATEMENTS OR THEORIES ADVOCATED OR IMPLIED ARE THOSE OF THE SOURCE AND DO NOT NECESSARILY REFLECT THE POSITION OR OPINION OF THE FOREIGN TECHNOLOGY DIVISION.

PREPARED BY:

TRANSLATION SERVICES BRANCH  
FOREIGN TECHNOLOGY DIVISION  
WP-AFB, OHIO.

## Glass Lubrication for Hot Machining of Metals

by

L. K. Kovalev, V. A. Fomenko, V. A. Korobochkon, S. I. Bogatyrev, S. I. Vaslineko, and R. M. Kosul'nikov

Lubricants for hot machining of metals on the basis of glass powder, consisting of silicon oxide, boron oxide, aluminum oxide, calcium oxide, sodium oxide, potassium oxide and water, are known. But the known glass lubs cause carbon deposition on the surfaces of objects.

To eliminate this deficiency is proposed a glass lub, which includes fire resistant clay and soluble glass.

The glass lub consists of (in weight parts) of 85-100 glass powder, 3-10 refractory clay, 3-10 soluble glass and water (for the obtaining of creamy like suspension).

The glass powder included in the glass lub includes (in percentages): 50-65  $\text{SiO}_2$ , 15-20  $\text{B}_2\text{O}_3$ , 2-4  $\text{Al}_2\text{O}_3$ , 5-7  $\text{CaO}$  and 10-14  $\text{K}_2\text{O} + \text{Na}_2\text{O}$ .

Variations are caused by technological reasons (granulation, boiling, grinding etc).

The suspension-lub is applied on cold metal billets, which are then dried, after which they are heated to necessary temperature.

The glass lub on the surface of metal billets melts, and the melted glass forms a thin uniform layer, of low heat conductivity, high wetability and antifric-

tion quality and produces an insulating layer between the extruded metal and tool.

Press operations with the use of the described lub raises the use of the metal and allows to obtain objects with high surface quality. The lub can be used, e.g. in the manufacture of pipes from stainless 1x18N9T type steel.

#### Object of invention

Glass lub for hot machining of metals, glass powder base lub, consisting of silicon oxide, boron oxide, aluminum oxide, calcium oxide, sodium and potassium oxides and water, distinguished by the fact, that for the purpose of removing carbon deposition on the surface of the object, the lub includes a refractory clay, soluble glass.

# DISTRIBUTION LIST

DEPARTMENT OF DEFENSE	Nr. Copies	MAJOR AIR COMMANDS	Nr. Copies
		AFSC	
		SCFDD	1
		DDC	25
HEADQUARTERS USAF		TDBTL	5
		TDBDP	5
AFCIN-3D2	1	AFMDC (MDF)	1
ARL (ARB)	1	ASD (ASYIM)	1
OTHER AGENCIES			
CIA	1		
NSA	6		
DIA	9		
AID	2		
OTS	2		
AEC	2		
PWS	1		
NASA	1		
ARMY (PSTC)	3		
NAVY	3		
NAFEC	1		
RAND	1		